

Basic GLOBE Training Workshop Equipment and Supplies

Measurement	Instrument	Quantity Required
Atmosphere/Climate		
Cloud Cover/Type	GLOBE Cloud chart poster	2
Air Temperature - Max/Min Current Temperature	Digital multi-day maximum/minimum thermometer	5
	U-shaped, liquid-filled, maximum/minimum thermometer	2
	Calibration thermometer	2
	Instrument shelter (painted)	1
	Clawhammer	1
	Nails, assorted	0.5 kg
	Screws, assorted (some must be at least 2 inches long)	1 pkg.
	Screwdriver Set	1 set
	Cup hook	1
	14 inch crosscut handsaw	1
Precipitation, Liquid	Rain gauge	2
Precipitation, Solid	Snow board	1
Precipitation pH	pH indicator paper	See Water pH
	pH pen	See Water pH
	pH meter	See Water pH
	three pH buffers	See Water pH
Atmosphere Learning Activities	Variety of thermometers including at least five different types. At least 80% should measure air temperature. Some should read Fahrenheit only. None of the thermometers should include those already specified as part of the kit.	30 20 - international
	White 8 1/2 x 11 paper	1 per person
	Blue 8 1/2 x 11 paper	1 per person
	Glue sticks	See Land Cover/Biology, Biometry/Tree Height
	2-liter clear plastic bottles	2
	1-liter clear plastic bottles	2
	Modeling clay	1 package

	Soda straws, non-flexible type	5
	Food coloring	1 package
Atmosphere Learning Activities	30 cm metric ruler	1
Hydrology		
Turbidity	Secchi Disk	2
	Rope	5 m
	Turbidity tube and cap	5
Water temperature	Organic liquid-filled thermometer (calibration thermometer)	5
Water pH	pH indicator paper	5
	pH pen, 2 point calibration	5
	pH meter	5
	three pH buffers	2 of each pH (4, 7, 10)
Electrical conductivity	Electrode-type conductivity tester	5
	Conductivity calibration solution	2 bottles
Salinity - hydrometer Method	Hydrometers with jars	5
	500 mL clear plastic graduated cylinders	1
	Table salt in small dispenser	2
Miscellaneous	Safety goggles	5pairs
	Surgical gloves	1 box
	250 mL polyethylene bottles with lids	5
	Plastic wash bottles	5
	Masking tape - 1 in. X 60 yd.	1 roll
	Jeweler's screwdriver/eye glass repair screwdriver (small)	3
	600 mL beakers	2
	100 mL clear plastic graduated cylinders	2
	Plastic cups	50
	2-gallon plastic pails with handles	10 (5 blue and 5 red)
	Rope, 1/4 -inches diameter	58 m
Land Cover/ Biology		
Site layout	GPS receiver	5
	Orange surveyor tape	1 roll
	Compasses	5

	Survey flags	2 dozen
	Disposable camera	1
Species Identification	Dichotomous keys, eastern and western U.S.	5 of each
Tree circumference	50 m tape measure	5
Tree height	clinometer (student made)	0 (student made)
	Soda straws, non-flexible type	5 dozen
	8 1/2 x 11 in. Clear plastic sheet protectors	1 per person
	Glue sticks	15
	8 1/2 x 11 in. cardboard sheets	1 per person
Canopy cover	Densiometer (student made)	0 (student made)
	1 1/4 inch inside diameter PVC pipe x 5 inches	1 per person
	Electrical tape	5 rolls
	Duct tape (2" x 60 yards)	2 rolls
	Dental floss, cellophane tape, scissors	8 sets
	Metal washers, 1/4 in ID	2 per person
Grass Biomass	Grass cutting shears	5
	Acetate marking pens	5 sets
Soil		
Soil Characterization		
	Garden trowels	5
	Wooden chop sticks or golf tees	40
	GLOBE Soil color chart	5
	Flexible 1 meter tape	5
	Meter stick	5
	Plastic zip lock bags, 4 liter capacity (1 gallon)	4 boxes
	Clear plastic dropcloths 2 mil x 9 ft x 12 ft	4
	Disposable camera	1
	Spay mist bottles	6
	Dutch Auger (all sites)	2
	Bucket Auger (sandy sites only) (optional, send upon instruction only)	2 (optional, send upon instruction only)
	1.5 meter plastic sheets	4

	2-gallon plastic pails with handles	11
	Nalgen acid bottle	2
	Distilled white vinegar	1 bottle (500 mL)
	Baking soda	1 box
Soil moisture	Survey flags	15
	Soil sample cans	36
	Masking tape - 1 in. X 60 yd.	1 roll
	Permanent markers	6
	Wood block 5 x 10 x 25 cm	2
	Hammer	2
	Compass	1
	Grass cutting shears	1
	0.1 g. accuracy Triple beam Balance 600 g capacity (International workshops only)	2 - international
	0.1 g. accuracy Electronic Balance 600 g cap. With 9v battery. (Domestic workshops only)	3
	Spare 9v batteries (Domestic workshops only)	3
	Microwave oven (Optional for international workshops, send upon instruction only . Voltage information will be provided)	1 1 - international (Send upon instruction only)
	Drying oven (soils) (Optional for international workshops, send upon instruction only. Voltage information will be provided)	1 1 - international (Send upon instruction only)
	Oven mittens	4 2 - international (Send only if microwave or drying oven is sent)
Soil Temperature	Taylor Dial or Digital Temp. Probe, 12 cm, Celsius	5 International send dial thermometers only
	Gutter spikes	5
	1/2 " diameter PVC pipe x 8 cm	5
	1/2 " diameter PVC pipe x 13 cm	5
	7/16' calibration wrench	5
Bulk density	White paper plates	100
	Mortar and pestle	1

	Rolling pin	1
	Sieve - number 10 with 2 mm openings	5
	Surgical gloves	1 box
	100 mL clear glass graduated cylinder	10
	Pocket calculators	5
	Nails	10
Soil pH	100 mL beakers	5
	Glass stirring rods	5
	pH meter	5
	pH buffers 4, 7, 10	1 each
	16 oz. Plastic wash bottles	5
	Plastic cups	20
	Plastic spoons	1 box
Soils Learning Activities	pH paper	4
	600 mL clear, colorless, glass beakers	4
	500 mL clear graduated cylinder	4
	1 mm nylon mesh screening, 50 cm x 50 cm	1
	1 liter clear, wide-mouth, colorless plastic soft drink bottles	4
	Scissors	1 pair
	Rubber bands	1 box
Unclassified Materials		
	2 inch clear, colorless tape	2
	Permanent markers, black	5
	Permanent markers, red	5
	Masking tape - 1 in. X 60 yd.	1 roll
	Paper towels, good strength	10 rolls
	Tote bags, 14 in. x 15 in. (approximately)	10
	Clipboards for 8 1/2 x 11 sheets	10
	2 in x 4 in wooden planks, each 2 feet long	4
	3 inch nails	20
	5-gallon plastic pails with lids	2
		0 International

